

Comparison of a checklist for clinical signs of impairment and detection of drugs in saliva.

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Objectives

In Belgium and some other countries, the police performs on-site drug screening when a driver is suspected of being drug impaired, since the test procedure is time consuming and the screening devices are relatively expensive. The objective of the study is to compare the results of a checklist with drug concentrations in saliva.

Method

The checklist used in the DRUID study in the Netherlands was used. Two fifth-year medical students performed the tests on 250 subjects, 50 drivers and 200 subjects attending a methadone clinic. Saliva analysis was performed by UPLC-MS/MS. As several signs were rarely observed, the parameters were reduced to those that were positive in at least 3 out of 250 test subjects. This selection led to a reduction to 13 (out of 28) parameters. A statistical test (Fisher's exact test) was used to test for correlations between the checklist parameters and the presence of substances in oral fluid.

Results

Most parameters did not correlate significantly with drug intake. The pupil tests seemed to be the best predicting parameters, especially for amphetamine and THC. Remarkably, some correlations were found between parameters and drugs where no correlation was expected, e.g. sleepiness and amphetamines. This can possibly be caused by the presence of combination use of drugs in a lot of subjects. The signs were often observed when high drug concentrations were seen in saliva, but in many cases with high saliva drug concentrations, no signs were observed.

Conclusions

In general, the checklist correlated badly with drug presence in this population of chronic drug users, but our results also confirm other studies that found that checklists are not very sensitive.

Key-words: checklist parameters, correlation, presence of substances in oral fluid.

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